

14. Find the slope and the y -intercept of $-5x + 6y = 4$.

a) $m = \frac{6}{5}; \left(0, -\frac{4}{5}\right)$

b) $m = \frac{5}{6}; \left(\frac{2}{3}, 0\right)$

c) $m = \frac{5}{6}; \left(0, -\frac{2}{3}\right)$

d) $m = \frac{5}{6}; \left(0, \frac{2}{3}\right)$

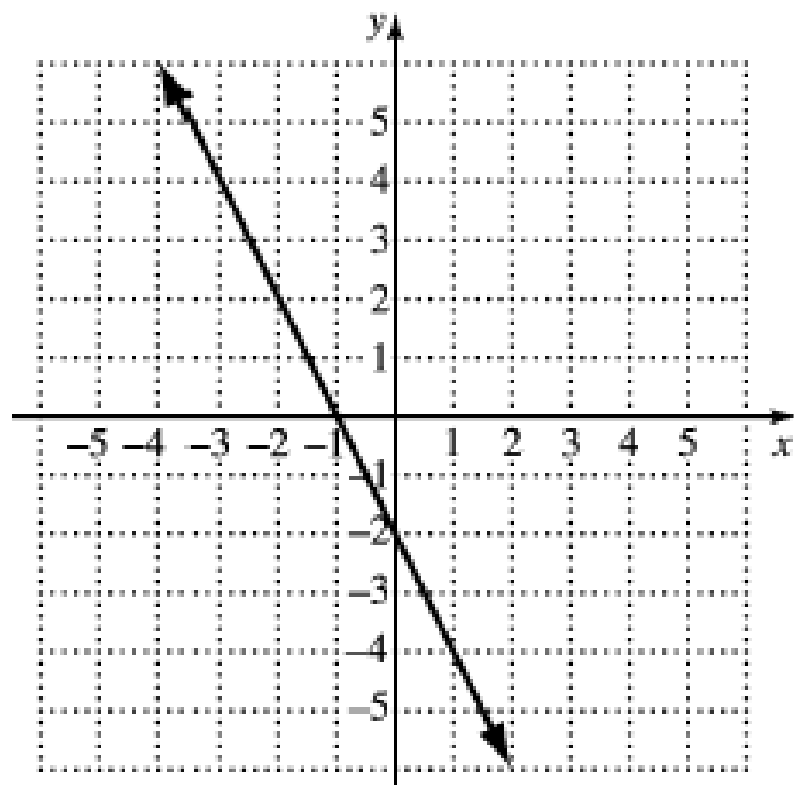
15. Which equation does this graph illustrate?

a) $x + 2y = -2$

b) $-x + 2y = 2$

c) $2x + y = -2$

d) $x - 2y = 2$



28. Determine the degree of the polynomial:

$$5x^5 + 3xy - 4x^2y^6.$$

a) 3

b) 4

c) 8

d) 2

29. Subtract: $(4y^4 - 5y^2 + 2y + 5) - (3y^3 - 3y^2 + 2y - 3)$.

a) $y^4 - 8y^2 + 4y + 2$

b) $4y^4 - 2y^2 + 4y + 8$

c) $4y^4 - 3y^3 - 2y^2 + 8$

d) $y^4 - 2y^2 + 8$

30. Multiply: $(x - 4)(x^2 + 3x - 2)$.

a) $x^3 - x^2 - 10x - 8$

b) $x^3 - x^2 - 14x + 8$

c) $x^3 - x^2 - 10x + 8$

d) $x^3 - 7x^2 - 14x + 8$

31. Multiply: $(a - 3b^4)^2$.

a) $a^2 - 3ab^4 + 9b^8$

b) $a^2 - 6ab^4 + 9b^{16}$

c) $a^2 - 6ab^4 + 9b^8$

d) $a^2 + 9b^8$

32. Factor completely: $16x^2y^2 - 81$. One of the factors is:

a) $6xy - 9$

b) $2xy + 9$

c) $6xy + 3$

d) $4xy - 9$

33. Factor completely: $x^2 - 10x + 24$. One of the factors is:

a) $x - 12$

b) $x + 4$

c) $x - 8$

d) $x - 6$

36. Divide and simplify: $\frac{x^2 + 2x - 8}{x^3 - 8} \div \frac{(x + 4)^2}{x^2 + 2x + 4}$.

a) $\frac{1}{x + 4}$

b) $\frac{x + 4}{x}$

c) $\frac{(x + 4)^2}{x^3 + 4}$

d) $\frac{x - 2}{x^2}$

37. Add: $\frac{6x}{x - 6} + \frac{3}{6 - x}$.

a) $\frac{3(2x + 1)}{x - 6}$

b) $\frac{3x}{x - 6}$

c) $\frac{1}{2 - x}$

d) $\frac{3(2x - 1)}{x - 6}$

Question 2: (4 points)

a) Perform and Simplify:

$$\frac{x^2 + 7x + 10}{x^2 - 25} \times \frac{2x - 10}{x^2 + x - 2}$$

Solution:

$$\begin{aligned} \frac{x^2 + 7x + 10}{x^2 - 25} \times \frac{2x - 10}{x^2 + x - 2} &= \frac{\cancel{(x+5)}\cancel{(x+2)}}{\cancel{(x+5)}\cancel{(x-5)}} \times \frac{2\cancel{(x-5)}}{\cancel{(x+2)}(x-1)} \\ &= \frac{2}{x-1} \end{aligned}$$

b) Factor $3x^3 + x^2 + 6x + 2$

Solution:

$$3x^3 + x^2 + 6x + 2 = x^2(3x + 1) + 2(3x + 1)$$

$$= (3x + 1)(x^2 + 2)$$

Question 3: (2 points)

Solve the inequality $3 + 2(x + 5) - 4x \geq 7x - 5$

Solution:

$$3 + 2(x + 5) - 4x \geq 7x - 5$$

$$3 + 2x + 10 - 4x \geq 7x - 5$$

$$2x - 4x - 7x \geq -5 - 3 - 10$$

$$-9x \geq -18$$

$$x \leq 2$$

Question 4: (2 points)

Solve the equation $x^2 + 6x + 8 = 0$

Solution:

$$x^2 + 6x + 8 = 0$$

$$(x + 4)(x + 2) = 0$$

Either $(x + 4) = 0$

$$x = -4$$

Or $(x + 2) = 0$

$$x = -2$$

Solution set $= \{-2, -4\}$

Question 5: (2 points)

Graph the equation $2x + 3y = 6$ using the intercept

Solution:

x – intercept : $(3, 0)$

y – intercept : $(0, 2)$

